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ABSTRACT

Since teaching is fundamentally a decision-making process, analyzing teachers' decisions can lead to a better understanding of learning and of management in the classroom. Three major features of teacher decision making are (1) that teaching is an intensely active profession; (2) that most of the work of teaching occurs in a group setting; and (3) that teachers work in isolation from both their administrative superiors and their peers. Assumptions which can be made about teacher decision making are, first, that teachers are rational professionals who carry out decisions in an uncertain, complex environment and, second, that a teacher's behavior is guided by his or her thoughts, judgments, and decisions. Favored methods for collecting data on teachers' mental processes are case study and ethnography, policy capturing, lens modeling, process tracing, and stimulated recall. A study by Barbara Garner Koech demonstrates that the most effective means of collecting valid data on teachers' decision making is a multi-method, multiple case study approach. (Three figures indicating typical daily and weekly responsibilities of teachers are included. Nineteen references are attached.) (MHC)

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Teacher Decision-Making

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TEACHER DECISION-MAKING

This paper will address the following questions -- 1. What do we know about teacher decision-making? 2. What are the assumptions about teacher decision-making? 3. What are the methods of collecting data on teacher decision-making? 3. What do we know about the validity of such methods (CASE STUDY and ETHNOGRAPHY, POLICY CAPTURING, LENS MODELING, PROCESS TRACING, and STIMULATED RECALL)?

What Do We Know About Teacher Decision Making?

Scholars from a variety of perspectives are making use of a common metaphor for describing the work of teaching, namely, that teaching is fundamentally a process of decision-making, under circumstances of varying clarity or ambiguity as to ends and means (Shedd, et al., 1986). Shedd quoting Mosston (1972), calls teaching a "chain of decision-making." (Shedd et al., 1986, p. 1.) He uses the decision-making rubric to analyze how teachers might share responsibility for making different decisions with their students. Others have noted the intensity of the decision-making demands which classroom teaching imposes upon teachers and the effects of their having to make so many decisions in isolation from others.

Hunter (1985), bases her "clinical theory of supervision" on the premise that "the teacher is a decision maker" and argues that "research-based cause-effect relationships" can tell

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teachers what to consider before deciding what to do even though "no one can tell teachers what to do." Sergiovanni (1985), takes exception to Hunter's "mindscape," but stresses the complexity of the decision-making that reflective practitioners must engage in the midst of constantly changing, unpredictable situations. Doyle (1985), notes that there is growing agreement that: "...teaching is not merely technical and rule driven, and teachers are not simply passive recipients who carry research-based practice to the classrooms. Rather, professional teachers are reflective, that is, they connect knowledge to situations through processes of observation, understanding, analysis, interpretations, and decision-making.

These observations indicate why researchers are becoming increasingly interested in teacher decision-making. Determining what the decisions are and how teachers make them can lead to an improved understanding of learning and of management in a classroom.

The Nature of Teaching

Shedd, et al., (1986), conducted a survey to illustrate why the decision-making rubric is essential to understanding the nature of teaching. Through this survey he also developed a conceptual framework that might help scholars and practitioners integrate various perspectives on teacher decision-making. This survey of teachers was conducted by the Tucson (Arizona) Education Association (TEA). The overall purpose of the project

was to provide a detailed, documented description of the work of teacher decision-making that might enhance the public's understanding and appreciation of the teaching profession.

The vast majority of teachers (over 80 percent) reported that they performed eleven main daily responsibilities (Figure 1), a smaller proportion of them performed five additional daily responsibilities (Figure 2). Nine other responsibilities were performed weekly or more often by at least 50 percent of the teachers who participated in the study (Figure 3). A large number of teachers further reported that they performed responsibilities not included in the daily and weekly categories of the survey questionnaire.

Figure 1

Daily Responsibilities Performed by Teachers

Listed in order of percentages at least 80 percent of teachers identified these as daily responsibilities.

- Observing and directing student behavior to keep students "on task" and to identify and avoid potential discipline problems;
- Recording and reporting classroom attendance;
- Observing class, group and individual behavior and progress in order to identify when plans might need to be changed;
- Communicating expectations to students concerning instructional goals and objectives, quality and amount of work, and behavior and discipline;
- Actually adjusting class, group or individual plans while class is still in session (i.e., making "mid-stream" changes);
- Leading class discussions and demonstrations;

- Administering in-class discipline and/or referring students to others for discipline;
- Assigning in-class work and homework to individuals, groups and whole classes;
- Lecturing to a class as a whole (for purposes of instruction);
- Instructing or reviewing work with individual students for purposes of instruction, while other students work independently or in groups; and
- Instructing groups of students, using a variety of techniques, while other students work independently or in groups.

(Source: Shedd, et al., 1986, p. 11.)

Figure 2

Additional Daily Responsibilities Performed by Classroom Teachers

At least 50 percent of teacher respondents identified these as daily responsibilities.

- Reviewing tests, homework and other student assignments, for purposes of identifying progress, problems, and special needs;
- Monitoring and supervising student behavior outside of the classroom, for example, in hallways, cafeterias or on the playground;
- Planning, developing and scheduling whole class and group lessons, activities and assignments;
- Planning activities and assignments for individual students, adjusting them to fit plans for the class and groups; and
- Discussing work with colleagues, for purposes of discussing subject matter, student needs, and each other's instructional plans and teaching techniques.

(Source: Shedd, et al., 1986, p. 10.)

Figure 3

Weekly Responsibilities Performed by Teachers

(Reported by 50 percent or more of survey respondents.)

- Recording and reporting grades;
- Placing and adjusting placement of individual students at appropriate curriculum levels;
- Developing course outlines and special instructional materials not already available;
- Counseling with individual students;
- Responding orally or in writing to special requests for information from administrators or other school officials;
- Consulting with specialists and colleagues to identify and analyze the special needs of individual students;
- Developing tests;
- Attending faculty meetings; and
- Planning and arranging for special resources for classroom instruction.

(Source: Shedd, et al., 1986, p. 11-12.)

The survey data indicate one reason why it would be so important to conceptualize teaching as a decision-making process. One of the over-arching responsibilities of teaching is the management of all diverse responsibilities they have to perform. The more responsibilities a person performs, and the more often he/she performs them, the less likely it is that anyone but that person can make what are ultimately the most critical decisions about the job: deciding how to allocate time among different responsibilities, deciding when to stop "doing" one thing and

start "doing" another, deciding when something needs to be "done" in the first instance, deciding how to achieve as many different objectives at once, and deciding what to do when two or more responsibilities appear to make inconsistent or even conflicting demands (Shedd, et al., 1986).

Features of Decision-Making

Three prominent features of teacher decision-making emerge from this study. The most obvious feature is that teaching is an intensely active profession. Also, although teachers are individually responsible for planning most of the activities, and deal with large amounts of information that must be assimilated and analyzed, they do not have the luxury of spending large amounts of time in reflection, either in planning or evaluation. It is noted that the most prominent items in the evaluating and planning represent activities that occur while class is in session -- observing class and individual behavior in order to identify needed changes in plans, and actually adjusting plans while in the midst of implementing them.

The second feature of teacher decision-making that emerged from this study is that teaching occurs in a group setting. Most of a teacher's explicit decision-making and acting must necessarily focus on his/her objectives for a group of students, generally concentrating on instructional purposes. Also, a lot of individual counseling occurs within the context of pursuing instructional objectives in that group setting (For them,

counseling is not confined to those occasions when a teacher sits down with an individual student and provides "counseling").

The third feature of this study concerns the isolation of individual teachers from administrators and from each other. Most teachers spend little time with people outside their immediate classrooms. There are at least three different ways in which this relative isolation from other school system members affects teacher decision-making. First, this means that teachers have relatively little responsibility for substantive policy-making outside their immediate classrooms. Most of their activity outside their immediate classrooms involves carrying out decisions or procedures established by others. Second, it means that teachers receive comparatively little direction from their administrative superiors. Most of their complaints about bureaucratic pressures focus on administrative paperwork and chores they consider unnecessary distractions from their classroom efforts, and not on the extent to which administrators actually direct -- or try to direct -- what they do in the classroom. Third, the isolation of teachers means that they are generally unable to draw on each other as resources at the moment that a decision responsibility arises.

What Are the Assumptions About Teacher Decision Making?

Research on teachers' pedagogical thoughts, judgments, and decisions are based on two fundamental assumptions. First, teachers are rational professionals who, like other professionals

such as physicians, make judgments and carry out decisions in an uncertain, complex environment. This assumption of rationality actually refers to teachers' intentions for their judgments and decisions rather than to their behavior. Second, a teacher's behavior is guided by his thoughts, judgments and decisions. If this is not true, "then teachers are automata of some kind" (Shavelson and Stern, 1981). Hence, the question of the relationship between thought and action in teaching becomes crucial.

What Are the Methods of Collecting Data on Teacher Decision Making?

Research on the cognitive processes and behavior of teachers shows a set of methods which differs somewhat from correlational and experimental studies (Shavelson and Stern, 1981). These methods attempt to collect data on mental processes and so use more or less direct probes of teacher's thoughts and judgments. The include CASE STUDY and ETHNOGRAPHY, POLICY CAPTURING, LENS MODELING, PROCESS TRACING, and STIMULATED RECALL.

(1) Case Study and Ethnography:

Qualitative research is predicated upon the assumption that an "inner understanding" enables a comprehension of human behavior in greater depth than is possible from the study of surface behavior, from paper and pencil tests for example, and from standardized interviews.

The assumptions of qualitative research are quite consistent with a major premise of research on teachers' decision-making, viz., in order to understand teaching, teacher's goals, judgments and decisions must be understood, especially in relation to teacher's behavior and the classroom context. The potential contribution of qualitative research on teaching is that fieldwork methods (e.g., participant observation, focused interviewing, etc.) and analytic techniques (e.g., development of conceptual and categorical systems form the data themselves) are open to discover valuable patterns and relationships that might be eliminated systematically through quantitative methods.

Erickson (1979b), pointed out a number of limitations and potential problems with ethnographies: (a) Timing: by the time the ethnography is written up, it is too late for use in the short run; (b) Validity: Ethnographers may not have been intensive enough, or they may be inept; the informants may not be articulate, or they may have concealed information; (c) Superficiality: Description may be stopped at surface appearances; and (d) Evidentiary Adequacy: The level of inference about overall trends may not be supported by the data.

(2) Policy Capturing and Lens Modeling:

In a policy capturing study, teachers would be given, for example, descriptions of 32 hypothetical students. These students might vary as to achievement, gender, class participation, ability to work independently, and classroom

behavior. Teacher's judgments would then be charted on the students' characteristics and the resulting multiple-regression equation would be interpreted as a model of the teacher's policy for judging students' probable success.

Policy-capturing studies are usually carried out in a laboratory with hypothetical judgmental tasks, although this need not be the case. Hence, a question of generalizability to real classrooms arises.

In a lens-modeling study, three pieces of information are required: (a) a criterion measure of the event being judged (e.g., students' preferences for reading materials), (b) a list of cues predictive of the criterion measure (e.g., presence or absence of fantasy, animals, danger, and humor), and (c) teachers' judgments of students' preferences (i.e., predictions of each student's reading preference). The correlation between a teacher's predictions of student's reading preferences and student's actual preferences provides a measure of overall judgmental accuracy, and a regression of a teacher's judgments on the cues provides a model of the teacher's policies for reaching their judgments. The problems in this approach are similar to those of policy capturing (Shavelson and Stern, 11).

(3) Process Tracing and Stimulated Recall:

In a process tracing study, typically, subjects are asked to "think aloud" while performing a task, solving a problem, or reaching a decision. For example, Peterson, Marx and Clark

(1978), asked teachers to think aloud while they planned a social studies lesson. The resultant verbal protocol becomes the data to be analyzed. The analysis may take the form of a traditional content analysis where the researcher counts the number of times a teacher refers to behavioral objectives while planning a lesson. Or, it might take the form of a flow chart modeling the teacher's thought processes. This flow chart would then serve as the basis for computer simulations.

Stimulated recall is typically used when the process-tracing technique would interfere with the subject's performance on a task. For example, asking a teacher to "think aloud" while conducting a lesson usually is not feasible. So, the researcher either audio- or video-tapes the lesson. After the lesson (or after school, depending on scheduling), the tape is played back to the teacher by the researcher and the teacher is assisted in recalling the covert mental activities that accompanied the overt behavior.

Both process-tracing and stimulated recall use verbal reports as data bearing on the cognitive processes of teachers, and they assume that teachers are able and willing to articulate their thought processes.

This assumption of introspection has a long and controversial history culminating in Nisbett's and Wilson's review (1977), discrediting verbal reports as data. However, Ericsson and Simon (1980), pointed out that Nisbett and Wilson did not have an adequate model for predicting whether or when

verbal reports would be accurate or inaccurate. They developed such a model which predicted that verbal reports would be accurate when subjects "think aloud" and doing so does not require restructuring of the information provided. When information being processed is not in verbal form, a subject's performance may be slowed down and his verbalization may be incomplete, but the report will be accurate (Shavelson and Stern, 1981).

What Do We Know About the Validity of Collecting Data on Teacher Decision Making?

Koech (1984), conducted a study of teacher decision that sought to ensure the validity of data. He advocated that the multiple case study method employed in his study was extremely effective in providing a rich source of qualitative and quantitative data.

According to Koech (1984), descriptive research such as naturalistic case studies can be effectively used to explore and describe conditions which exist at a specific time. The case study approach is especially applicable to the study of factors influencing teachers' decision-making or the decision-making process itself. Within the case study, the investigator examines the individual unit or area in depth. The basic approach of the case study is to deal with all pertinent aspects of the selected person, area, or situation.

Using the case study approach, Koech (1984), sought to explore in-depth factors which influenced four first grade teachers' diagnostic decision-making. The study focused on the influence of personal and environmental factors on three areas related to teachers' selection and use of diagnostic procedures and information: (1) The teachers' selection among various diagnostic procedures: (2) Their use of specific procedures; and (3) The weight (i.e., the importance and utility) which the teachers attributed to information derived from each of the procedures. The study had two purposes:

1. To develop generalizations about possible relationships among the personal and environmental factors investigated and the teachers' selection and use of diagnostic procedures and their weighing of information from these procedures; and
2. To develop hypotheses for further research.

The design of this exploratory field study employed the in-depth and interpretive focus of a multiple case study approach within naturalistic settings. In addition, the research utilized a multi-method approach emphasizing participant observation techniques, including direct observation, informant interviewing, and documentation. Specifically, the basic design was a fixed multiple case studies investigation of two experimental groups (based on teacher belief systems) and no control groups utilizing repeated measures within a multi-method approach to identify

differences among the groups rather than any effects of treatment.

Information gathered in the course of this study was analyzed in an approach based on the "experience sampling method" developed by Kitwood (1977).

The multiple case study was judged to be very effective for the study of teachers' decision making. In this study, it provided rich data on teachers' diagnostic decisions and underlying influences. Thirty-four personal and environmental factors which influence teachers' decision-making were identified in thick description, and numerous generalizations about interactions among these factors and hypotheses for further research were posited. The process of decision-making itself was illuminated; it appears to have elements of the creative thinking process described by Ghiselin (1952), since the teachers vacillate between rational thinking and intuitive processes in a manner similar to that described by Parnes and Biondi (1975), as a creative balance. In addition, a theoretical base of instructional base of instructional decision-making was clarified while no theoretical base for diagnostic decision was identified.

One major strength of this design is that the data represent the teacher's perspective, yet with application of Guba's safeguards, the trustworthiness of the data is reasonably assured. The teachers were idiosyncratic in decision-making and required time and space to formulate their thoughts on a process which they had not frequently considered seriously. When

provided with opportunities to contemplate, the quality of the data in reference to its richness improved dramatically. However, the teachers required support which increased potential problems of subjective interaction. Employment of the safeguards reduced the potential for bias.

In addition, the multi-method, multiple case study design appears to be philosophically consistent with the paradigm of studying teachers as professional decision-makers. It allows for the teachers' active participation in the study. They have opportunities to assist in the development of instruments and procedures for gathering the data and opportunities to asses the accuracy of the representation. The extent of involvement and cooperation of the teachers in this study expanded as the teachers became aware of their potential for involvement and the mutual accountability.

With this method, the teachers' decision-making is investigated in a naturalistic setting. The decisions investigated are those made by teachers about students in their classes, not about simulated case histories. The process of decision-making is explored as it evolves. The opportunities for perception of unsuspected factors, characteristics and relationships are far greater than in controlled studies.

Therefore, the validity of multiple case study as a method of collecting data about teacher decision-making is undeniable.

Conclusion:

In short, this paper has analyzed the various aspects of the teacher decision-making process -- assumptions about teacher decision-making, methods of collecting data about teacher decision-making, and the validity of the methods of collecting data about teacher decision-making. It indicates that there are three major features of teacher decision-making. First, the most prominent items in teacher decision-making involve activities that occur while the class is in session. Second, most of a teacher's explicit decision-making focuses on his objectives for a group of students. Third, most of a teacher's activity outside his immediate classroom involves carrying out decisions or procedures established by others. Fourth, teachers are generally unable to draw on each other as resources in decision-making.

This paper identifies two fundamental assumptions about teacher decision-making. First, teachers are rational professionals who, like other professionals such as physicians, make judgments and carry out decisions in an uncertain, complex environment. This assumption of rationality actually refers to teachers' intentions for their judgments and decisions rather than to their behavior. Second, a teacher's behavior is guided by his thoughts, judgments and decisions. Hence, the question of the relationship between thought and action in teaching becomes crucial.

It further emerges from this analysis that the favored methods of collecting data on teacher decision-making are -- CASE

STUDY and ETHNOGRAPHY, POLICY CAPTURING, LENS MODELING, PROCESS TRACING, and STIMULATED RECALL. Finally, the paper discusses the validity of the multiple case study method as a method of collecting data on teacher decision-making.

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